



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

Date: 6/12/2019
Subject: Review of Region 5 Data for Village Discount
To: Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60605
From: Kathleen Swan, Analyst
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Kathleen Swan

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Village Discount

Analyses included in this report:

Metals full ICP (S)

Report Name: 1905008 Metals full ICP (S) FINAL Jun 12 19 1318



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Village Discount
Project Number: 19SC01
Project Manager: Sarah Clark

Reported:
Jun-12-19 13:18

Accredited Analyses included in this Report



Method: EPA 200.7 in Soil
Analysis: Metals full ICP (S)
Analyte

Certifications

Aluminum hi	ISO/IEC 17025:2005
Calcium	ISO/IEC 17025:2005
Iron hi	ISO/IEC 17025:2005
Magnesium hi	ISO/IEC 17025:2005
Potassium	ISO/IEC 17025:2005
Sodium	ISO/IEC 17025:2005
Strontium	ISO/IEC 17025:2005
Tin	ISO/IEC 17025:2005
Titanium	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.



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Reported:
Jun-12-19 13:18

ANALYSIS CASE NOTES

General Information

<u>Work Order</u>	<u>Number of Samples</u>
1905008	17

<u>Analytical Step</u>	<u>SOP</u>
Sample preparation	Metals025 v3 (EPA Method 200.2)
Analysis	Metals003a v5 (EPA Method 200.7)

All holding times were met. Analyst K Swan 312 353 9071.

Sample Analysis and Results

The data reported herein meets the requirements referenced in Quality Assurance Project Plan for Road Surface Soil Sampling Investigation, Village Discount Outlet, Inc., dated April 2019. Calcium and magnesium for samples 1905008-01 through -12 and tin for 1905008-05 were reported from a 10-fold dilution. It is noted that many of the samples were filled with small stones.

Quality Control

All quality control (QC) audits were within CRL limits or did not result in qualification, with the following exception:

1905008-11 is flagged J for inhomogeneity in aluminum (24%), calcium (24%), iron (38%), magnesium (43%), potassium (31%), sodium (76%), and tin (39%, limit 20%). Magnesium is flagged K for possible high bias in instrument QC (122%, limit $100 \pm 10\%$).



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
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WORK ORDER

Printed: 5/20/2019 8:36:15AM

1905008

US EPA Region 5 Chicago Regional Laboratory

Client: Air Division, US EPA Region 5

Project: Village Discount

Project Manager: Angela Ockrassa Davis

Project Number: 19SC01

Report To:

Sarah Clark
Air Division, US EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60605

Phone: (312) 886-9733
Fax: (312) 353-2001

Date Due: Jun-03-19 15:00 (32 day TAT)

Received By: Robert Snyder

Date Received: May-02-19 14:50

Logged In By: Robert Snyder

Date Logged In: May-07-19 12:21

Samples Received at: 0.5 °C
Sample tags/labels: Yes
Seals Intact: Yes
Received on ice: Yes
Paperwork Included: Yes

Work Order Comments:

Note: S13-17 contain PII

Sample ID: 1905008-01 **Sampled:** May-02-19 09:20 **Matrix:** Soil

Sample Name: S01 **Sample Location/Comments:** Village Discount # 1

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 09:20	
Metals ICP-MS (s)	180	Oct-29-19 09:20	
Total % Dry Solids 105C	7	May-09-19 09:20	

Sample ID: 1905008-02 **Sampled:** May-02-19 09:30 **Matrix:** Soil

Sample Name: S02 **Sample Location/Comments:** Village Discount # 2

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 09:30	
Metals ICP-MS (s)	180	Oct-29-19 09:30	
Total % Dry Solids 105C	7	May-09-19 09:30	

Sample ID: 1905008-03 **Sampled:** May-02-19 09:44 **Matrix:** Soil

Sample Name: S03 **Sample Location/Comments:** Village Discount # 3

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
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1905008**US EPA Region 5 Chicago Regional Laboratory****Client:** Air Division, US EPA Region 5
Project: Village Discount**Project Manager:** Angela Ockrassa Davis
Project Number: 19SC01**Sample ID:** [1905008-03](#) **Sampled:** [May-02-19 09:44](#) **Matrix:** [Soil](#)**Sample Name:** [S03](#) **Sample Location/Comments:** [Village Discount # 3](#)**Sample Comments:**

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 09:44	
Metals ICP-MS (s)	180	Oct-29-19 09:44	
Total % Dry Solids 105C	7	May-09-19 09:44	

Sample ID: [1905008-04](#) **Sampled:** [May-02-19 09:54](#) **Matrix:** [Soil](#)**Sample Name:** [S04](#) **Sample Location/Comments:** [Village Discount # 4](#)**Sample Comments:**

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 09:54	
Metals ICP-MS (s)	180	Oct-29-19 09:54	
Total % Dry Solids 105C	7	May-09-19 09:54	

Sample ID: [1905008-05](#) **Sampled:** [May-02-19 10:03](#) **Matrix:** [Soil](#)**Sample Name:** [S05](#) **Sample Location/Comments:** [Village Discount # 5](#)**Sample Comments:**

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 10:03	
Metals ICP-MS (s)	180	Oct-29-19 10:03	
Total % Dry Solids 105C	7	May-09-19 10:03	

Sample ID: [1905008-06](#) **Sampled:** [May-02-19 10:11](#) **Matrix:** [Soil](#)**Sample Name:** [S06](#) **Sample Location/Comments:** [Village Discount # 6](#)**Sample Comments:**

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 10:11	
Metals ICP-MS (s)	180	Oct-29-19 10:11	
Total % Dry Solids 105C	7	May-09-19 10:11	

1905008

US EPA Region 5 Chicago Regional Laboratory

Client: Air Division, US EPA Region 5
Project: Village Discount

Project Manager: Angela Ockrassa Davis
Project Number: 19SC01

Sample ID: [1905008-07](#) Sampled: [May-02-19 10:21](#) Matrix: [Soil](#)

Sample Name: [S07](#) Sample Location/Comments: [Village Discount # 7](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 10:21	
Metals ICP-MS (s)	180	Oct-29-19 10:21	
Total % Dry Solids 105C	7	May-09-19 10:21	

Sample ID: [1905008-08](#) Sampled: [May-02-19 10:29](#) Matrix: [Soil](#)

Sample Name: [S08](#) Sample Location/Comments: [Village Discount # 8](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 10:29	
Metals ICP-MS (s)	180	Oct-29-19 10:29	
Total % Dry Solids 105C	7	May-09-19 10:29	

Sample ID: [1905008-09](#) Sampled: [May-02-19 10:38](#) Matrix: [Soil](#)

Sample Name: [S09](#) Sample Location/Comments: [Village Discount # 9](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 10:38	
Metals ICP-MS (s)	180	Oct-29-19 10:38	
Total % Dry Solids 105C	7	May-09-19 10:38	

Sample ID: [1905008-10](#) Sampled: [May-02-19 10:51](#) Matrix: [Soil](#)

Sample Name: [S10](#) Sample Location/Comments: [Village Discount # 10](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 10:51	
Metals ICP-MS (s)	180	Oct-29-19 10:51	
Total % Dry Solids 105C	7	May-09-19 10:51	

1905008**US EPA Region 5 Chicago Regional Laboratory****Client:** Air Division, US EPA Region 5
Project: Village Discount**Project Manager:** Angela Ockrassa Davis
Project Number: 19SC01**Sample ID:** [1905008-11](#) **Sampled:** [May-02-19 11:11](#) **Matrix:** [Soil](#)**Sample Name:** [S11](#)**Sample Location/Comments:** [Village Discount # 11](#)**Sample Comments:**

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 11:11	
Metals ICP-MS (s)	180	Oct-29-19 11:11	
Total % Dry Solids 105C	7	May-09-19 11:11	

Sample ID: [1905008-12](#) **Sampled:** [May-02-19 11:19](#) **Matrix:** [Soil](#)**Sample Name:** [S12](#)**Sample Location/Comments:** [Village Discount # 12](#)**Sample Comments:**

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 11:19	
Metals ICP-MS (s)	180	Oct-29-19 11:19	
Total % Dry Solids 105C	7	May-09-19 11:19	

Sample ID: [1905008-13](#) **Sampled:** [May-02-19 12:51](#) **Matrix:** [Soil](#)**Sample Name:** [S13](#)**Sample Location/Comments:** Non responsive**Sample Comments:** [PII](#)

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 12:51	
Metals ICP-MS (s)	180	Oct-29-19 12:51	
Total % Dry Solids 105C	7	May-09-19 12:51	

Sample ID: [1905008-14](#) **Sampled:** [May-02-19 13:01](#) **Matrix:** [Soil](#)**Sample Name:** [S14](#)**Sample Location/Comments:** Non responsive**Sample Comments:** [PII](#)

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 13:01	
Metals ICP-MS (s)	180	Oct-29-19 13:01	
Total % Dry Solids 105C	7	May-09-19 13:01	

1905008**US EPA Region 5 Chicago Regional Laboratory****Client:** Air Division, US EPA Region 5
Project: Village Discount**Project Manager:** Angela Ockrassa Davis
Project Number: 19SC01**Sample ID:** [1905008-15](#) **Sampled:** [May-02-19 13:09](#) **Matrix:** [Soil](#)**Sample Name:** [S15](#)**Sample Location/Comments:** Non responsive**Sample Comments:** [PII](#)

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 13:09	
Metals ICP-MS (s)	180	Oct-29-19 13:09	
Total % Dry Solids 105C	7	May-09-19 13:09	

Sample ID: [1905008-16](#) **Sampled:** [May-02-19 13:19](#) **Matrix:** [Soil](#)**Sample Name:** [S16](#)**Sample Location/Comments:** Non responsive**Sample Comments:** [PII](#)

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 13:19	
Metals ICP-MS (s)	180	Oct-29-19 13:19	
Total % Dry Solids 105C	7	May-09-19 13:19	

Sample ID: [1905008-17](#) **Sampled:** [May-02-19 13:31](#) **Matrix:** [Soil](#)**Sample Name:** [S17](#)**Sample Location/Comments:** Non responsive**Sample Comments:** [PII](#)

Analysis	Hold time (days)	Expires	Comments
Metals full ICP (S)	180	Oct-29-19 13:31	
Metals ICP-MS (s)	180	Oct-29-19 13:31	
Total % Dry Solids 105C	7	May-09-19 13:31	

WORK ORDER

Printed: 5/20/2019 8:36:15AM

1905008

US EPA Region 5 Chicago Regional Laboratory

Client: Air Division, US EPA Region 5
Project: Village Discount

Project Manager: Angela Ockrassa Davis
Project Number: 19SC01

REVIEWED

By Amanda Wroble at 8:37 am, May 20, 2019

Reviewed By

Date



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Air Division, US EPA Region 5
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Chicago IL, 60605

Project: Village Discount
Project Number: 19SC01
Project Manager: Sarah Clark

Reported:
Jun-12-19 13:18

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1905008-01) Matrix: Soil Sampled: May-02-19 09:20 Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	3500			24	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	180000			240	"	10	"	"	"
Iron hi	9300			9.4	"	1	"	"	"
Magnesium hi	120000	K		240	"	10	"	"	"
Potassium	610			94	"	1	"	"	"
Sodium	310			47	"	"	"	"	"
Strontium	75			0.35	"	"	"	"	"
Tin	28			2.4	"	"	"	"	"
Titanium	110			0.71	"	"	"	"	"

S02 (1905008-02) Matrix: Soil Sampled: May-02-19 09:30 Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	4000			18	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	170000			180	"	10	"	"	"
Iron hi	11000			7.2	"	1	"	"	"
Magnesium hi	110000	K		180	"	10	"	"	"
Potassium	540			72	"	1	"	"	"
Sodium	310			36	"	"	"	"	"
Strontium	75			0.27	"	"	"	"	"
Tin	130			1.8	"	"	"	"	"
Titanium	150			0.54	"	"	"	"	"

S03 (1905008-03) Matrix: Soil Sampled: May-02-19 09:44 Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	11000			19	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	120000			190	"	10	"	"	"
Iron hi	34000			7.4	"	1	"	"	"
Magnesium hi	62000	K		190	"	10	"	"	"
Potassium	1000			74	"	1	"	"	"
Sodium	540			37	"	"	"	"	"
Strontium	75			0.28	"	"	"	"	"
Tin	230			1.9	"	"	"	"	"
Titanium	450			0.56	"	"	"	"	"



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Project: Village Discount
Project Number: 19SC01
Project Manager: Sarah Clark

Reported:
Jun-12-19 13:18

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

S04 (1905008-04)

Matrix: Soil

Sampled: May-02-19 09:54

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	8700			22	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	150000			220	"	10	"	"	"
Iron hi	34000			8.8	"	1	"	"	"
Magnesium hi	85000	K		220	"	10	"	"	"
Potassium	940			88	"	1	"	"	"
Sodium	350			44	"	"	"	"	"
Strontium	100			0.33	"	"	"	"	"
Tin	55			2.2	"	"	"	"	"
Titanium	320			0.66	"	"	"	"	"

S05 (1905008-05)

Matrix: Soil

Sampled: May-02-19 10:03

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	12000			23	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	110000			230	"	10	"	"	"
Iron hi	45000			9.4	"	1	"	"	"
Magnesium hi	44000	K		230	"	10	"	"	"
Potassium	1000			94	"	1	"	"	"
Sodium	590			47	"	"	"	"	"
Strontium	74			0.35	"	"	"	"	"
Tin	5600			23	"	10	"	"	"
Titanium	520			0.70	"	1	"	"	"

S06 (1905008-06)

Matrix: Soil

Sampled: May-02-19 10:11

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	17000			21	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	140000			210	"	10	"	"	"
Iron hi	23000			8.5	"	1	"	"	"
Magnesium hi	60000	K		210	"	10	"	"	"
Potassium	1200			85	"	1	"	"	"
Sodium	740			42	"	"	"	"	"
Strontium	130			0.32	"	"	"	"	"
Tin	190			2.1	"	"	"	"	"
Titanium	480			0.64	"	"	"	"	"



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Project: Village Discount
Project Number: 19SC01
Project Manager: Sarah Clark

Reported:
Jun-12-19 13:18

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

S07 (1905008-07) Matrix: Soil Sampled: May-02-19 10:21 Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	14000			18	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	150000			180	"	10	"	"	"
Iron hi	25000			7.1	"	1	"	"	"
Magnesium hi	66000	K		180	"	10	"	"	"
Potassium	1100			71	"	1	"	"	"
Sodium	1000			35	"	"	"	"	"
Strontium	120			0.27	"	"	"	"	"
Tin	330			1.8	"	"	"	"	"
Titanium	450			0.53	"	"	"	"	"

S08 (1905008-08) Matrix: Soil Sampled: May-02-19 10:29 Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	13000			22	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	150000			220	"	10	"	"	"
Iron hi	16000			8.7	"	1	"	"	"
Magnesium hi	66000	K		220	"	10	"	"	"
Potassium	920			87	"	1	"	"	"
Sodium	580			44	"	"	"	"	"
Strontium	130			0.33	"	"	"	"	"
Tin	94			2.2	"	"	"	"	"
Titanium	420			0.65	"	"	"	"	"

S09 (1905008-09) Matrix: Soil Sampled: May-02-19 10:38 Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	12000			19	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	140000			190	"	10	"	"	"
Iron hi	19000			7.8	"	1	"	"	"
Magnesium hi	64000	K		190	"	10	"	"	"
Potassium	1100			78	"	1	"	"	"
Sodium	730			39	"	"	"	"	"
Strontium	120			0.29	"	"	"	"	"
Tin	310			1.9	"	"	"	"	"
Titanium	390			0.58	"	"	"	"	"



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Project: Village Discount
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Reported:
Jun-12-19 13:18

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

S10 (1905008-10)

Matrix: Soil

Sampled: May-02-19 10:51

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	9500			18	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	160000			180	"	10	"	"	"
Iron hi	14000			7.3	"	1	"	"	"
Magnesium hi	80000	K		180	"	10	"	"	"
Potassium	910			73	"	1	"	"	"
Sodium	730			37	"	"	"	"	"
Strontium	110			0.28	"	"	"	"	"
Tin	450			1.8	"	"	"	"	"
Titanium	350			0.55	"	"	"	"	"

S11 (1905008-11)

Matrix: Soil

Sampled: May-02-19 11:11

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	9600	J		21	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	160000	J		210	"	10	"	"	"
Iron hi	21000	J		8.5	"	1	"	"	"
Magnesium hi	90000	J		210	"	10	"	"	"
Potassium	860	J		85	"	1	"	"	"
Sodium	550	J		42	"	"	"	"	"
Strontium	99			0.32	"	"	"	"	"
Tin	730	J		2.1	"	"	"	"	"
Titanium	350			0.64	"	"	"	"	"

S12 (1905008-12)

Matrix: Soil

Sampled: May-02-19 11:19

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	12000			20	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	110000			200	"	10	"	"	"
Iron hi	15000			8.2	"	1	"	"	"
Magnesium hi	38000	K		200	"	10	"	"	"
Potassium	840			82	"	1	"	"	"
Sodium	470			41	"	"	"	"	"
Strontium	110			0.31	"	"	"	"	"
Tin	200			2.0	"	"	"	"	"
Titanium	330			0.61	"	"	"	"	"



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Project: Village Discount
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Reported:
Jun-12-19 13:18

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

S13 (1905008-13)

Matrix: Soil

Sampled: May-02-19 12:51

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	13000			22	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	9800			22	"	"	"	"	"
Iron hi	21000			8.9	"	"	"	"	"
Magnesium hi	5300	K		22	"	"	"	"	"
Potassium	1600			89	"	"	"	"	"
Sodium	200			45	"	"	"	"	"
Strontium	21			0.34	"	"	"	"	"
Tin	3.0			2.2	"	"	"	"	"
Titanium	61			0.67	"	"	"	"	"

S14 (1905008-14)

Matrix: Soil

Sampled: May-02-19 13:01

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	11000			23	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	14000			23	"	"	"	"	"
Iron hi	21000			9.0	"	"	"	"	"
Magnesium hi	8300	K		23	"	"	"	"	"
Potassium	1500			90	"	"	"	"	"
Sodium	170			45	"	"	"	"	"
Strontium	40			0.34	"	"	"	"	"
Tin	3.9			2.3	"	"	"	"	"
Titanium	96			0.68	"	"	"	"	"

S15 (1905008-15)

Matrix: Soil

Sampled: May-02-19 13:09

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	8100			22	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	19000			22	"	"	"	"	"
Iron hi	26000			8.9	"	"	"	"	"
Magnesium hi	8600	K		22	"	"	"	"	"
Potassium	800			89	"	"	"	"	"
Sodium	400			44	"	"	"	"	"
Strontium	45			0.33	"	"	"	"	"
Tin	16			2.2	"	"	"	"	"
Titanium	140			0.67	"	"	"	"	"



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Project: Village Discount
Project Number: 19SC01
Project Manager: Sarah Clark

Reported:
Jun-12-19 13:18

Metals by ICP-AES using EPA 200.7 (modified)
US EPA Region 5 Chicago Regional Laboratory

S16 (1905008-16)

Matrix: Soil

Sampled: May-02-19 13:19

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	9000			21	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	28000			21	"	"	"	"	"
Iron hi	14000			8.6	"	"	"	"	"
Magnesium hi	14000	K		21	"	"	"	"	"
Potassium	790			86	"	"	"	"	"
Sodium	480			43	"	"	"	"	"
Strontium	42			0.32	"	"	"	"	"
Tin	3.1			2.1	"	"	"	"	"
Titanium	160			0.64	"	"	"	"	"

S17 (1905008-17)

Matrix: Soil

Sampled: May-02-19 13:31

Received: May-02-19 14:50

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum hi	13000			20	mg/kg	1	B19E029	May-21-19	May-28-19
Calcium	50000			20	"	"	"	"	"
Iron hi	14000			8.0	"	"	"	"	"
Magnesium hi	13000	K		20	"	"	"	"	"
Potassium	1500			80	"	"	"	"	"
Sodium	260			40	"	"	"	"	"
Strontium	76			0.30	"	"	"	"	"
Tin	3.3			2.0	"	"	"	"	"
Titanium	280			0.60	"	"	"	"	"



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Batch B19E029 - Hot Block Digestion

Blank (B19E029-BLK1)

Prepared: May-21-19 Analyzed: May-28-19

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Aluminum hi	U			20	mg/kg						
Calcium	U			20	"						
Iron hi	U			8.0	"						
Magnesium hi	U			20	"						
Potassium	U			80	"						
Sodium	U			40	"						
Strontium	U			0.30	"						
Tin	U			2.0	"						
Titanium	U			0.60	"						

LCS (B19E029-BS1)

Prepared: May-21-19 Analyzed: May-28-19

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Strontium	100.2			0.30	mg/kg	100.0		100%	85-115		
Tin	99.08			2.0	"	100.0		99.1%	85-115		
Titanium	20.98			0.60	"	20.00		105%	85-115		

Duplicate (B19E029-DUP1)

Source: 1905008-01

Prepared: May-21-19 Analyzed: May-28-19

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Aluminum hi	2982			20	mg/kg		3521			16.6	20
Calcium	174300			200	"		178900			2.59	20
Iron hi	7965			8.1	"		9314			15.6	20
Magnesium hi	113700			200	"		116400			2.33	20
Potassium	575.9			81	"		613.8			6.38	20
Sodium	336.6			40	"		311.0			7.91	20
Strontium	68.47			0.30	"		75.00			9.10	20
Tin	24.97			2.0	"		28.13			11.9	20
Titanium	96.69			0.60	"		110.2			13.0	20

Duplicate (B19E029-DUP2)

Source: 1905008-11

Prepared: May-21-19 Analyzed: May-28-19

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Metals by ICP-AES using EPA 200.7 (modified) - Quality Control
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Batch B19E029 - Hot Block Digestion

Duplicate (B19E029-DUP2)			Source: 1905008-11			Prepared: May-21-19 Analyzed: May-28-19					
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Aluminum hi	12210	Q		20	mg/kg		9570			24.2	20
Calcium	127200	Q		200	"		161200			23.6	20
Iron hi	30970	Q		7.8	"		20990			38.4	20
Magnesium hi	58470	Q		200	"		90260			42.7	20
Potassium	1177	Q		78	"		861.7			31.0	20
Sodium	1214	Q		39	"		548.4			75.5	20
Strontium	114.1			0.29	"		99.20			14.0	20
Tin	488.7	Q		2.0	"		725.2			39.0	20
Titanium	426.1			0.59	"		349.2			19.8	20

MRL Check (B19E029-MRL1)			Prepared: May-21-19 Analyzed: May-28-19								
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Aluminum hi	22.90			20	mg/kg	20.00		114%	65-135		
Calcium	20.18			20	"	20.00		101%	65-135		
Iron hi	8.700			8.0	"	8.000		109%	65-135		
Magnesium hi	20.55			20	"	20.00		103%	65-135		
Potassium	81.66			80	"	80.00		102%	65-135		
Sodium	43.17			40	"	40.00		108%	65-135		
Strontium	0.3290			0.30	"	0.3000		110%	65-135		
Tin	1.936			2.0	"	2.000		96.8%	65-135		
Titanium	0.6560			0.60	"	0.6000		109%	65-135		

Matrix Spike (B19E029-MS1)			Source: 1905008-01			Prepared: May-21-19 Analyzed: May-28-19					
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Strontium	168.2			0.30	mg/kg	100.0	75.00	93.2%	75-125		
Tin	124.2			2.0	"	100.0	28.13	96.1%	75-125		
Titanium	120.1	Q		0.60	"	20.00	110.2	49.9%	75-125		

Matrix Spike (B19E029-MS3)			Source: 1905008-11			Prepared: May-21-19 Analyzed: May-28-19					
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit



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Metals by ICP-AES using EPA 200.7 (modified) - Quality Control
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Batch B19E029 - Hot Block Digestion

Matrix Spike (B19E029-MS3)

Source: 1905008-11

Prepared: May-21-19 Analyzed: May-28-19

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Strontium	221.4	Q		0.28	mg/kg	92.10	99.20	133%	75-125		
Tin	347.8	Q		1.8	"	92.10	725.2	NR	75-125		
Titanium	516.7	Q		0.55	"	18.42	349.2	910%	75-125		

Reference (B19E029-SRM1)

Prepared: May-21-19 Analyzed: May-28-19

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Aluminum hi	7220			24	mg/kg	8000		90.2%	47.38-152.5		
Calcium	4103			24	"	4580		89.6%	80.79-119		
Iron hi	12920			9.6	"	14100		91.6%	60.43-139.7		
Magnesium hi	2281			24	"	2240		102%	75.45-125		
Potassium	1881			96	"	2000		94.1%	69.5-130.5		
Sodium	195.9			48	"	216.0		90.7%	72.22-127.8		
Strontium	95.51			0.36	"	102.0		93.6%	80.88-119.6		
Tin	91.93			2.4	"	96.20		95.6%	77.55-122.7		
Titanium	337.8			0.72	"	371.0		91.0%	17.47-182.5		



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Jun-12-19 13:18

Notes and Definitions

K	The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded